



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,318	12/20/2006	Thierry Livache	127911	5574
92793	7590	08/10/2011	EXAMINER	
Oliff & Berridge, PLC			KAUR, GURPREET	
P.O. Box 320850			ART UNIT	
Alexandria, VA 22320-4850			PAPER NUMBER	
			1759	
			NOTIFICATION DATE	
			DELIVERY MODE	
			08/10/2011	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction92793@oliff.com

jarnstrong@oliff.com

Office Action Summary

Application No.

10/578,318

Applicant(s)

LIVACHE ET AL.

Examiner

GURPREET KAUR

Art Unit

1759

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 16-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the Claims

1. Claims 1-33 are pending.

Claims 1-15 and 29-33 are being examined and claims 16-28 are withdrawn.

Status of Objections

2. Objection of claim 14 is withdrawn in view of applicant's amendment.

Status of the Rejections

3. Applicant's amendment of 4/29/2011 does not render the application allowable.

The rejection of claims 1, 2, 6 and 9 under 35 USC 112, second paragraph is withdrawn in view of applicant's amendment.

All other rejections from the previous office action are maintained. New grounds of rejection under 35 USC 103(a) are necessitated in view of added new claims.

Election/Restrictions

4. Applicant's election with traverse of claims 1-15 in the reply filed on 4/29/2011 is acknowledged. The traversal is on the ground(s) that thorough search and examination of elected group I will result in a prior art that is relevant to the claims of groups II and III with undue search burden. This is not found persuasive because groups I, II and III represent distinct inventions. The Group I claim(s) 1-15 is to a device for receiving fluid sample, Group II, claim(s) 16-24, is to a process for sampling and

transporting a fluid sample and Group III, claim(s) 25-28, drawn to a process for forming an electrochemical cell. All three groups claim three different inventions.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5, 6-9, 12, 13, 29 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (WO 00/25923).

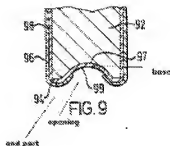
Regarding claims 1, 2, 4 and 29, Moore et al. teaches a dropping tool for transferring drops of liquid (see abstract) comprised of:

end part (near the tip) with a recess (97) which opens to an opening, the recess has a base and end part has a hydrophobic layer (layer 96) which is at the periphery of

the recess opening (see figure 9 below). A second electrically conducting hydrophilic zone (98) is adjacent to the hydrophobic layer and covers the base of the recess (see figure 9 below). The recess holds the drop of liquid when the tip of the dropping tool is in contact with the liquid (see page 6 description of figure 9).

Moore teaches the recess is made deep enough to hold the liquid drop which has size of about 0.1 mm or less (see page 6, paragraph 4 and page 9, paragraph 1), thus recess has depth in the range of 0.1 mm = 100 micrometer or less to retain the liquid drop of 0.1 mm and has volume in the range of 0.1 picoliter to 1 microliter. Moore does not explicitly indicate diameter of the opening, however the recess has to have a diameter opening of 0.1mm or greater to retain liquid drop of size 0.1mm, therefore the cavity depth/opening diameter ratio range is from 0.01 to 1.

Moore et al. does not specifically teaches the device is configured to form an electrode but however Moore et al. teaches the hydrophilic layer is comprised of amorphous carbon or platinum metal (see page 8, ll. 1-3 and page 4), description of figure 5) which is formed around the recess. Amorphous carbon or platinum metal are inherently electrically conductive and thus it would be obvious the dropping tool can be configured to form an electrode.



Regarding claim 3, the hydrophobic layer (96) extends into the recess without covering the base (see figure 9 above).

Regarding claim 5, Moore teaches the end part is comprised of recess (97) which has a layer of hydrophilic material such as amorphous carbon or platinum metal (see page 8, ll. 1-3 and page 4, description of figure 5). Amorphous carbon or platinum metal are inherently electrically conductive.

Regarding claims 6 and 31-33 Moore teaches the recess is made deep enough to hold the liquid drop which has a size of about 0.1 mm or less (see page 6, paragraph 4 and page 9, paragraph 1), thus the recess has depth in the range of 0.1 mm = 100 micrometer or less to retain the liquid drop of 0.1 mm and has a volume in the range of 0.1 picoliter to 1 microliter. Moore does not explicitly indicate the diameter of the opening, however the cavity has to have a diameter opening of 0.1mm or greater to retain liquid drop of size 0.1mm, therefore the cavity depth/opening diameter ratio range

is from 0.01 to 1. Moore also teaches the recess has circular cross-section with substantially conical shape (see figure 9).

Regarding claims 7, 8, 12 and 13, Moore teaches rod (substrate 92) one side of the end part with a hydrophobic layer, 98 that has protruding end (protruding end at element 94) which extends beyond the end of the substrate (see figure 9 above). Moore further teaches the substrate is made up of Teflon (see page 4, see description of figure 5), which is inherently capable of elastic deformation.

Regarding claim 9, Moore teaches the sleeve (hydrophobic layer, 98 made up of amorphous carbon) and protruding part (protruding end at element 94) of the substrate is coated with hydrophobic layer (98) (see page 4, see description of figure 5 and page 6 description of figure 9 and page 9, paragraph 15).

Claims 10, 11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. as applied to claim 1 above, and further in view of Vann et al. (U.S. Pub. No. 2001/0010206).

Regarding claims 10 and 11, Moore teaches a pressure wave is used in the body of the pin such that pressure causes the drop of liquid to become projected out from the tip of the pin on to the substrate (see page 6 paragraph 2). Moore et al. does not teach device comprised of damping element (spring) which will reduce the impact on the device when it comes in contact with the substrate surface.

However, Overbeck et al. teaches a fluid deposit element (12) which is comprised of damping element (spring, 22) to provide pressure to dispense the fluid (see col. 4, ll. 31-33 and figure 2). Furthermore, the spring bias the fluid deposit element for repeatable positioning (see col. 9, ll. 19-26), thus it is obvious the spring will reduce the impact on the device when it comes in contact with the substrate surface.

Therefore it would be obvious to person of ordinary skill in the art at the time of the invention to use spring as means to induce pressure as taught by Overbeck in the device of Moore's device because both Overbeck and Moore are performing the same task of dispensing liquid via pressure and moreover spring bias the fluid deposit element or dropping tool for repeatable positioning (see col. 9, ll. 19-26).

Regarding claim 14, Overbeck teaches the fluid deposit element is comprised of spring in the shape of S (see figure 1B).

Regarding claim 15, Overbeck teaches the fluid deposit element (12) retract and extend in the carrier (17) via spring-loaded bearings such that lowering the carrier causes precise position of the tip to the substrate (see col. 7 ll. 65-67 over to col. 8 ll. 1-6).

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. as applied to claim 1 above, and further in view of Nagy et al. (U.S. Pat. No. 4,939,410).

Re claim 30, Moore et al. teaches a dropping tool for transferring drops of liquid which is comprised of hydrophilic layer of amorphous carbon or platinum metal (see page 8, ll. 1-3 and page 4), description of figure 5) which is formed around the recess of the dropping tool. Amorphous carbon or platinum metal are inherently electrically conductive and thus it would be obvious the dropping tool can be configured to form an electrode. Moore does not explicitly indicate an electrochemical cell comprising the dropping tool.

However, Nagy teaches an electrode arrangement wherein electrode 2 is capable of for dispensing mercury drop and is used in an electrochemical cell (see figure 3 and col. 5, ll. 54-65).

Therefore it would be obvious to person of ordinary skill in the art at the time of the invention that Moore's dropping tool can also be used as an electrode in an electrochemical cell as taught by Nagy.

Response to Arguments

Applicant's arguments filed 4/29/2011 have been fully considered but they are not persuasive.

Applicant argues on page 10 that the cited reference Moore regarding claim 1 does not teach hydrophilic material is electrically conductive since description of embodiment of figure 9 does not explicitly teaches the material of hydrophilic layer.

Examiner respectfully disagrees with applicant's argument. In the office action, examiner relied on teachings of other embodiments such as figures 5 and 12 to teach the hydrophilic layer is composed of hydrogenated amorphous carbon or platinum. Even

though description of figure 9 is silent to material of hydrophilic layer, however, hydrophilic layer which is common to embodiments (2, 3, 5, 6, 7, 12 and 14) is made up of either hydrogenated amorphous carbon or platinum. Thus it would be obvious that hydrophilic layer of figure 9 is made up of either hydrogenated amorphous carbon or platinum.

Applicant further argues that Moore's dropping pin cannot be configured to be an electrode and refers to Moore's last paragraph on page 2, first paragraph on page 5, last paragraph on page 6, third paragraph on page 7 and first paragraph on page 8. Examiner respectfully disagrees with applicants arguments. Applicant cites embodiments that were not relied to make the rejection. In an event, each of applicant's cited paragraphs of Moore (last paragraph on page 2, first paragraph on page 5, third paragraph on page 7 and first paragraph on page 8) the substrate itself is made up of steel pin (see embodiments, 1, 4, 8, 10 and 11) which is inherently a conductive material, thus all the embodiments of Moore are comprised of electrically conductive material and can be configured to be an electrode. Although, Moore teaches a liquid transferring tool, however examiner construes an electrode is just a conductive material to which current can be applied and Moore transferring tool is made up of conductive material (platinum or steel or amorphous carbon) which can be configured to be an electrode. Furthermore, a device configured to be an electrode is just an intended use of the device and does not impart any structural limitations to the device.

Applicant argues on page 11, regarding claim 6 that Moore does not teach depth of the cavity and in particular cavity depth being 0.1 mm or opening of 0.1 mm.

Examiner respectfully disagrees with the applicant's arguments. From Moore's teaching of a recess/cavity is deep enough that a drop of liquid does not make contact with the solid substrate (see page 6, figure 9 description) and liquid drop of size of 0.1 mm or less, one of ordinary skill in the art can discern that a cavity able to hold a liquid drop of 0.1 mm is equivalent to cavity's volume. A drop of spherical shape will have diameter of 0.1 mm, thus depth of the cavity is equal to diameter of drop which is 0.1 mm. Furthermore, the drop of liquid is dispense from the recess onto the substrate (see page 6, figure 9 description), thus for a drop of liquid to leave the recess opening, the minimum size of the recess opening has to be 0.1mm. Therefore, Moore's does teach the ration of depth/opening of the recess is in the range of 0.01 to 1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GURPREET KAUR whose telephone number is (571)270-7895. The examiner can normally be reached on Monday-Friday 9:00-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey T. Barton can be reached on (571)272-1307. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. K./
Examiner, Art Unit 1759

/Alex Noguerola/
Primary Examiner, Art Unit 1759
July 28, 2011